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Attorney for Plaintiff and the Class

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

IMRAN CHAUDHRI, individually and on behalf of those similarly situated, Plaintiff, v. **LUMILEDS, LLC.**, Defendant.	Civil Action No. **CLASS ACTION** **DEMAND FOR JURY TRIAL**

1. Pursuant to L. Civ. R. 10.1(a), Plaintiff resides at 32 Revere Rd., Piscataway, N.J. 08854. Defendant, Lumileds, LLC has its headquarters at 370 West Trimble Road, San Jose, CA 95131.

JURISDICTION AND VENUE

2. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §1332(d) because there are 100 or more class members, the aggregate amount in controversy exceeds $5,000,000 exclusive of interest and costs, and Plaintiff is a citizen of a state different than Defendant.

3. The District of New Jersey is a proper venue because Plaintiff purchased Defendant's product from an authorized retailer within this district and the causes of action accrued in this district.

Lumileds, LLC Is the Successor to Philips Automotive Lighting

4. On June 30, 2014, Royal Philips publicly announced that it began the process to combine its Philips Lumileds LED business and Philips Automotive Lighting business into a stand-alone company within the Philips Group.

5. In 2015, the process to combine Philips Lumileds and Philips Automotive Lighting into a stand-alone company was completed. That stand-alone company is Lumileds, LLC.

6. Prior to combining Philips Lumileds and Philips Automotive Lighting into a stand-alone company, Philips Lumileds, Philips Automotive Lighting, and other Philips affiliates and entities shared: a common legal department, common management, common computer networks, and common marketing.

7. On June 20, 2017, Royal Philips publicly announced that it completed the sale of an 80.1% interest in Lumileds, LLC to funds managed by Apollo Global Management, LLC. Royal Philips retained the remaining interest in Lumileds, LLC.

8. Lumileds, LLC is the supplier and warrantor of, and liable for, Philips Automotive Lighting products, including, Philips X-tremeVision headlamps, which are the subject of this action.

STATEMENT OF THE CLAIM

9. In May of 2015, Plaintiff was in the market for new headlamp bulbs for his 2001 Honda Odyssey minivan because one of his headlamps had burned out.

10. Plaintiff purchased a twin package of Philips X-tremeVision 9003 headlamps from authorized retailer, Pep Boys, an automotive parts store located at 1052 Stelton Rd. in Piscataway, New Jersey on May 24, 2015 for $59.99 plus tax using his MasterCard credit card.

11. Plaintiff purchased Philips X-tremeVision headlamps instead of standard headlamps because the X-tremeVision headlamp packaging represented that Philips X-tremeVision headlamps produce 100% more light.

Fig. A – stock photograph of Philips X-tremeVision packaging identical to the packaging Plaintiff purchased.

12. Plaintiff paid a premium for Philips X-tremeVision headlamps compared to Philips standard headlamps. Pep Boys sold two Philips X-tremeVision 9003 headlamps for $59.99 whereas it sold single, Philips standard 9003 headlamps for only $10.99.

13. But for the representation on the packaging that Philips X-tremeVision headlamps produce 100% more light, Plaintiff would not have purchased Philips X-tremeVision headlamps, and instead, purchased Philips standard headlamps.

14. Plaintiff then installed the Philips X-tremeVision 9003 headlamps in his Honda Odyssey minivan. Immediately after installing the Philips X-tremeVision headlamps, Plaintiff was unable to determine if the X-tremeVision headlamps produced 100% more light because his frame of reference was one old headlamp and one burned out headlamp compared to two newly installed headlamps – two headlamps obviously produce more light than just one.

15. In or around November 2015, one of the Philips X-tremeVision 9003 headlamps in Plaintiff's Honda Odyssey minivan, burned out.

16. Plaintiff then purchased Sylvania headlamps from Walmart and replaced the burnt out Philips X-tremeVision 9003 with a Sylvania brand 9003 headlamp.

17. Plaintiff visually compared the light output of the Sylvania headlamp he installed to the still functioning Philips X-tremeVision headlamp in his Honda Odyssey minivan and did not notice any difference in light output between the two headlamps.

18. Thereafter, Plaintiff's counsel contacted Calcoast-ITL, a photometric testing laboratory used by the National Highway Traffic Safety Administration (NHTSA), to conduct objective testing to determine if Philips X-tremeVision headlamps produce 100% more light than standard Philips headlamps.

19. Calcoast tested four Philips X-tremeVision 9003 headlamps and four Philips standard 9003 headlamps to determine light output.

20. Luminous flux is the measure of the total light emitted from a bulb in units of Lumens (Lm).

21. Calcoast testing revealed that Philips standard 9003 headlamps in low beam configuration produced an average total light output of 894 Lumens (Lm). Calcoast testing also revealed that Philips X-tremeVision 9003 headlamps in low beam configuration produced an average total light output of 915 Lumens (Lm).

22. On average, Philips X-tremeVision headlamps put out only 2.3% more light than standard headlamps – far less than 100% more light as represented on Philips X-tremeVision packaging.

Philips Standard HB2, Lower Beam at 12.80V

Sample	Current	Power	Flux	Color (x, y)	CCT (K)
S1	4.789A	61.3W	866 Lm	(0.427, 0.399)	3140K
S2	4.749A	60.8W	855 Lm	(0.427, 0.399)	3140K
S3	4.808A	61.5W	904 Lm	(0.427, 0.399)	3140K
S4	4.778A	61.2W	950 Lm	(0.427, 0.399)	3140K

Average flux: 894 Lm

Philips X-tremeVision HB2, Lower Beam at 12.80V

Sample	Current	Power	Flux	Color (x, y)	CCT (K)
XV1	4.726A	60.5W	962 Lm	(0.408, 0.393)	3470K
XV2	4.719A	60.4W	920 Lm	(0.409, 0.394)	3456K
XV3	4.744A	60.7W	885 Lm	(0.406, 0.393)	3513K
XV4	4.741A	60.7W	892 Lm	(0.408, 0.393)	3470K

Average flux: 915 Lm

Fig. B – Calcoast test results from lab report attached to Complaint as Ex. A at 3.

If Philips X-tremeVision Headlamps Actually Emitted 100% More Light X-tremeVision Headlamps Would Violate Federal Law

23. In the United States, headlamp design and performance are highly regulated "so that replacement light sources are interchangeable with original equipment light sources and provide equivalent performance." 49 CFR 564.2(a)(1). The regulations "are to ensure that redesigned or newly developed light sources are designated as distinct, different, and noninterchangeable with previous existing light sources." 49 CFR 564.2(a)(2). In other words, federal regulations mandate manufacturers follow strict performance standards (both a minimum and maximum) so headlamps are interchangeable and perform the same – no better, no worse.

24. Type 9003 headlamps are also referred to by their federal regulatory designation, Type HB2.

25. Type HB2 or 9003 headlamp design and performance specifications – including light output – are governed by National Highway Traffic Safety Administration (NHTSA) Docket no. 98-3397-11. (Attached to Complaint as Ex. B).

26. According to NHTSA Docket no. 98-3397-11, Type HB2 or 9003 low beam headlamps are legally required to emit 910 Lumens +/- 10% of light. (See attached Ex. B. at 2).

27. In other words, to comply with federal law, Philips X-tremeVision 9003 low beam headlamps must produce at least 819 Lumens but cannot exceed 1001 Lumens. (10% of 910 = 91; 910-91=819; 910+91=1001).

28. If Philips X-tremeVision 9003 headlamps actually produced 100% more light, then light output would be 1820 Lumens (910 Lumens x 2), greatly exceed regulatory limits, and violate federal law.

CLASS ALLEGATIONS

29. Plaintiff brings this action as a class action pursuant to Fed. R. Civ. P. 23.

30. The Class is defined as: Everyone who purchased Philips X-tremeVision headlamps in the United States (other than for resale). Plaintiff reserves the right to modify the class definition and the class period based on the results of discovery or otherwise prior to class certification.

31. Defendant has acted on grounds generally applicable to the Plaintiff and the Class, thereby making appropriate, final injunctive relief and/or corresponding declaratory relief with respect to the Class as a whole.

32. The Class is so numerous that joinder of all members is impracticable. It is estimated that there are at least, tens of thousands of Class members.

33. Whether Defendant misrepresented that Philips X-tremeVision headlamps produce 100% more light is a factual and legal claim common to Plaintiff and the Class.

34. Plaintiff's claim is typical of the Class claim because it arises from the same events and conduct upon which other Class members' claims are based – whether Defendant misrepresented that Philips X-tremeVision headlamps produce 100% more light.

35. Plaintiff will fairly and adequately protect the interests of the Class. Plaintiff's interests coincide with, and are not antagonistic to, the interests of the Class.

36. Plaintiff has retained counsel experienced in both prosecuting class actions and photometric litigation. Plaintiff's counsel prosecuted a class action in this district against Osram Sylvania concerning misleading performance claims on headlamp packaging that resulted in a 30 million dollar class action settlement. *Chaudhri v. Osram Sylvania, Inc*., Civil Action No. 11-5504.

37. The alleged misrepresentations predominate over any individual representations because the "100% more light" claim is printed on the front of product packaging and represented to the entire Class.

38. A class action in this case is the superior method of adjudicating a large number of small, individual claims involving the same facts and circumstances.

COUNT I
VIOLATION OF STATE CONSUMER PROTECTION STATUTES
NEW JERSEY CONSUMER FRAUD ACT, N.J.S.A. 56:8-1 *et seq*.

39. Plaintiff incorporates paragraphs 1-38.

40. Defendant committed an unconscionable commercial practice, an affirmative misrepresentation, a deception, a fraud, a false pretense, and a false promise by representing on the product packaging to consumers that Philips X-tremeVision headlamps produce 100% more light, when in-fact, Philips X-tremeVision headlamps do not produce anything close to 100% more light, and produce far less than 100% more light.

41. Defendant knew Philips X-tremeVision headlamps do not produce 100% more light because Defendant tested Philips X-tremeVision headlamps prior to distributing them to confirm compliance with National Highway Traffic Safety Administration (NHTSA) Docket specifications.

42. Plaintiff and the Class suffered an ascertainable loss because they received something less than what was bargained for. Defendant represented that Philips X-tremeVision headlamps produce 100% more light. Plaintiff and the Class paid for headlamps that produce 100% more light. But the Philips X-tremeVision headlamps Plaintiff and the Class received produced far less than 100% more light.

43. Plaintiff and the Class suffered an ascertainable loss because they paid more for Philips X-tremeVision headlamps than they would have paid for standard headlamps. Philips X-tremeVision headlamps typically sell for twice the price (or more) than Philips standard headlamps. Plaintiff paid $59.99 at Pep Boys for two Philips X-tremeVision 9003 headlamps. At that time, Pep Boys sold single, Philips standard 9003 headlamps for only $10.99. Two Philips standard 9003 headlamps would have cost Plaintiff $21.98 ($10.99 x 2).

44. Plaintiff and the Class purchased Philips X-tremeVision headlamps as a result of Defendant's packaging claim that Philips X-tremeVision headlamps produce 100% more light.

45. Defendant caused Plaintiff and the Class to purchase Philips X-tremeVision headlamps by making misrepresentations on the packaging that Philips X-tremeVision headlamps produce 100% more light.

46. But for Defendant's misrepresentation that Philips X-tremeVision headlamps produce 100% more light, Plaintiff and the Class would not have purchased Philips X-tremeVision headlamps.

COUNT II
Common Law Fraud

47. Plaintiff incorporates paragraphs 1-46.

48. Defendant made false representations of fact to Plaintiff and the Class that Philips X-tremeVision headlamps produce 100% more light.

49. Philips X-tremeVision headlamps do not produce anything close to 100% more light, and produce far less than 100% more light.

50. Defendant knew Philips X-tremeVision headlamps do not produce 100% more light because Defendant tested Philips X-tremeVision headlamps prior to distributing them to confirm compliance with National Highway Traffic Safety Administration (NHTSA) Docket specifications.

51. Defendant intended Plaintiff and the Class to rely on its packaging claims and to believe that Philips X-tremeVision headlamps produce 100% more light.

52. Defendant's representation that Philips X-tremeVision headlamps produce 100% more light is the kind of representation which naturally would induce consumers to purchase the product.

53. Plaintiff and the Class reasonably and justifiably relied on Defendant's representations that Philips X-tremeVision headlamps produce 100% more light. Plaintiff and the Class were without the ability to determine the truth of these statements on their own and could only rely on Defendant's packaging claims before purchase.

54. Plaintiff and the Class purchased Philips X-tremeVision headlamps as a result of Defendant's packaging claim that Philips X-tremeVision headlamps produce 100% more light.

55. Defendant caused Plaintiff and the Class to purchase Philips X-tremeVision headlamps by making misrepresentations on the packaging that Philips X-tremeVision headlamps produce 100% more light.

56. Plaintiff and the Class suffered damages because Plaintiff and the Class received something less than what was bargained for. Defendant represented that Philips X-tremeVision headlamps produce 100% more light. Plaintiff and the Class paid for headlamps that produce 100% more light. But the Philips X-tremeVision headlamps

Plaintiff and the Class received did not produce anything close to 100% more light, and produce far less than 100% more light.

57. Plaintiff and the Class suffered damages because they paid more for Philips X-tremeVision headlamps than they would have for standard headlamps. Philips X-tremeVision headlamps typically sell for twice the price (or more) than Philips standard headlamps. Plaintiff paid $59.99 at Pep Boys for two Philips X-tremeVision 9003 headlamps. At that time, Pep Boys sold single, Philips standard 9003 headlamps for only $10.99. Two Philips standard 9003 headlamps would have cost Plaintiff $21.98 ($10.99 x 2).

COUNT III
Negligent Misrepresentation

58. Plaintiff incorporates paragraphs 1-57.

59. Defendant negligently made false representations of fact to Plaintiff and the Class that Philips X-tremeVision headlamps produce 100% more light.

60. Philips X-tremeVision headlamps do not produce anything close to 100% more light, and produce far less than 100% more light.

61. Defendant intended Plaintiff and the Class to rely on its packaging claims and to believe that Philips X-tremeVision headlamps produce 100% more light.

62. Defendant's representation that Philips X-tremeVision headlamps produce 100% more light is the kind of representation which naturally would induce consumers to purchase the product.

63. Plaintiff and the Class reasonably and justifiably relied on Defendant's representations that Philips X-tremeVision headlamps produce 100% more light.

Plaintiff and the Class were without the ability to determine the truth of these statements on their own and could only rely on Defendant's packaging claim before purchase.

64. Plaintiff and the Class purchased Philips X-tremeVision headlamps as a result of Defendant's packaging claim that Philips X-tremeVision headlamps produce 100% more light.

65. Defendant caused Plaintiff and the Class to purchase Philips X-tremeVision headlamps by making misrepresentations on the packaging that Philips X-tremeVision headlamps produce 100% more light.

66. Plaintiff and the Class suffered damages because Plaintiff and the Class received something less than what was bargained for. Defendant represented that Philips X-tremeVision headlamps produce 100% more light. Plaintiff and the Class paid for headlamps that produce 100% more light. But the Philips X-tremeVision headlamps Plaintiff and the Class received did not produce anything close to 100% more light, and produce far less than 100% more light.

67. Plaintiff and the Class suffered damages because they paid more for Philips X-tremeVision headlamps than they would have for standard headlamps. Philips X-tremeVision headlamps typically sell for twice the price (or more) than Philips standard headlamps. Plaintiff paid $59.99 at Pep Boys for two Philips X-tremeVision 9003 headlamps. At that time, Pep Boys sold single, Philips standard 9003 headlamps for only $10.99. Two Philips standard 9003 headlamps would have cost Plaintiff $21.98 ($10.99 x 2).

COUNT IV
Breach of Express Warranty

68. Plaintiff incorporates paragraphs 1-67.

69. Defendant made a representation of fact to Plaintiff and the Class on the product packaging that Philips X-tremeVision headlamps produce 100% more light.

70. Defendant's representation of fact to Plaintiff and the Class that Philips X-tremeVision headlamps produce 100% more light is a basis of the bargain which created an express warranty.

71. Defendant breached its express warranty because Philips X-tremeVision headlamps Plaintiff and the Class received do not produce anything close to 100% more light, and produce far less than 100% more light.

72. Plaintiff and the Class suffered damages because Plaintiff and the Class received something less than what was bargained for. Defendant represented that Philips X-tremeVision headlamps produce 100% more light. Plaintiff and the Class paid for headlamps that produce 100% more light. But the Philips X-tremeVision headlamps Plaintiff and the Class received do not produce anything close to 100% more light, and produce far less than 100% more light.

73. Plaintiff and the Class suffered damages because they paid more for Philips X-tremeVision headlamps than they would have for standard headlamps. Philips X-tremeVision headlamps typically sell for twice the price (or more) than Philips standard headlamps. Plaintiff paid $59.99 at Pep Boys for two Philips X-tremeVision 9003 headlamps. At that time, Pep Boys sold single, Philips standard 9003 headlamps for only $10.99. Two Philips standard 9003 headlamps would have cost Plaintiff $21.98 ($10.99 x 2).

COUNT V
Magnuson-Moss Warranty Act

74. Plaintiff incorporates paragraphs 1-73.

75. Philips X-tremeVision headlamps are consumer products because they are tangible personal property distributed in commerce and normally used for personal, family, or household vehicles.

76. Defendant is the supplier and warrantor of, and liable for, Philips Automotive Lighting products, including, Philips X-tremeVision headlamps.

77. Defendant's representation on Philips X-tremeVision headlamp packages that X-tremeVision headlamps produce 100% more light is a written affirmation of fact or written promise made in connection with the sale of a consumer product by a supplier to a buyer which relates to the nature of the material or workmanship and affirms or promises that such will meet that specified level of performance at the time of purchase and for an average life of over 300 hours (average life on back of packaging).

78. Defendant's representation to Plaintiff and the Class that X-tremeVision headlamps produce 100% more light is a basis of the bargain and a written warranty.

79. Defendant breached its written warranty because Philips X-tremeVision headlamps Plaintiff and the Class purchased do not produce anything close to 100% more light, and produce far less than 100% more light.

80. Defendant is legally unable to repair or provide replacement headlamps that produce 100% more light because headlamps that produce 100% more light would exceed regulatory limits, and violate federal law.

81. Since Defendant is legally unable to remedy its breach of written warranty with repair or replacement, refund is the only viable remedy.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff, on behalf of himself and the Class, demands judgment against Defendant as follows:

A. For an order certifying the proposed Class under Rule 23 of the Federal Rules of Civil Procedure and naming Plaintiff as Class Representative and his attorneys as Class Counsel to represent the Class;

B. For an order declaring that Defendant's conduct violates the New Jersey Consumer Fraud Act and other state consumer protection laws, statutory attorney fees, treble damages, and substantive injunctive relief prohibiting Defendant from making false claims on headlamp packaging;

C. For an order entering judgment in favor of Plaintiff and the Class against Defendant;

D. For an order awarding damages against Defendant in favor of Plaintiff and the Class in an amount to be determined by the Court as fair and just;

E. For an order awarding Plaintiff and the Class members pre-judgment interest on any damages awarded by the Court;

F. For an order awarding Plaintiff and the Class refunds pursuant to the Magnuson-Moss Warranty Act, and costs and expenses, including attorneys' fees;

G. For an order of restitution and all other forms of equitable monetary relief;

H. For procedural injunctive relief prohibiting Defendant from making false claims on headlamp packaging; and

I. For an order awarding Plaintiff and the Class their reasonable attorneys' fees and expenses, and costs of suit; and granting such other and further relief as the Court deems just.

PRAYER FOR PUNITIVE DAMAGES

Defendant acted with actual malice, intent to deceive, and knowledge the "100% more light" packaging claim was false when it sold Philips X-tremeVision headlamps because Defendant tested Philips X-tremeVision headlamps prior to distributing them, to confirm compliance with National Highway Traffic Safety Administration (NHTSA) Docket specifications. Since Defendant knew Philips X-tremeVision headlamp performance fell far short of the packaging claim, continued the fraudulent scheme for years, and caused unsuspecting consumers to pay double or more than they would have for standard headlamps, punitive damages are warranted.

JURY DEMAND

Plaintiff demands trial by jury on all triable issues.

Certification Pursuant to L. Civ. R. 11.2

I certify under penalty of perjury that I am unaware of any other action pending in any court, or of any pending arbitration or administrative proceeding, where the matter in controversy in this case is the subject.

Dated: February 15, 2018

/s Thomas Paciorkowski

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EXHIBIT A

LIGHTING TECHNOLOGY CALCOAST PHOTOMETRIC TESTING
INDUSTRIAL TESTING LABORATORY

Report No. 151221-01H Page 1 of 6

TEST REPORT

Report Date: 27 January 2016

Project Name: Philips HB2 (9003) Automotive Headlamp Replaceable Bulb Luminous Flux Measurement and Comparison

Submitted by: Thomas Paciorkowski, Esq.
Jersey City, NJ 07304

Test Laboratory: Calcoast – ITL
San Leandro, CA 94577

Samples Submitted: Four (4) packages Philips 9003 B1 Standard bulbs
Two (2) packages of two (2) Philips 9003 XVB2 X-tremeVision bulbs
All packages received unopened
submitted 21 Dec 2015

SUMMARY

The above samples were submitted for luminous flux measurement to compare the performance of X-tremeVision style bulbs to equivalent standard halogen automotive headlamp bulbs.

Results on the following pages.

Written by:
Douglas G. Cummins
Photometric Engineer

Approved by:
Mark A. Evans
Laboratory Director

Report No.: 151221-01H

TEST DATA SHEET

Project Name: Philips HB2 (9003) Automotive Headlamp Replaceable Bulb Luminous Flux Measurement and Comparison

BACKGROUND

In the U.S., automotive headlamp replaceable bulbs are required to conform to Federal Motor Vehicle Safety Standard 108 (FMVSS 108). FMVSS 108 is a part of the Code of Federal Regulations (49CFR571.108) and is overseen by USDOT/NHTSA.

The HB2 is a dual filament halogen bulb providing light sources for an automobile's Lower Beam and Upper Beam headlamp functions. Information for the HB2 is found in NHTSA Docket 1998-3397-11 and has specifications for bulb dimensions and electrical/photometric performance. The docket does not include requirements for bulb filament design life.

The HB2 automotive headlamp replaceable bulb is similar to the world standard H4 bulb except that the HB2 has more stringent filament dimensional tolerances than the H4. Industry designates the HB2 as the 9003 bulb.

Photometric performance of headlamp bulbs is determined by luminous flux. Luminous flux is the measure of the total light emitted in all directions from the bulb in units of Lumens (Lm). When installed in a headlamp, the total emitted light from the bulb is redirected using reflectors and/or lens optics to various points in front of the vehicle. This redirected light is measured within a solid angle and is expressed as luminous intensity in units of Lumens per steradian or Candela (Cd).

DESCRIPTION

The Philips X-tremeVision HB2 bulbs have a similar appearance to the Philips Standard HB2 bulbs except that the X-tremeVision obscuration at the tip of the bulb is metalized and a blue colored band was added to the bulb envelope from the bottom of the obscuration to approximately the end of the Lower Beam filament. Both bulbs are marked "HB2" and "DOT" indicating that the manufacturer certifies that the bulbs meet the requirements of FMVSS 108. See photos.

Prior to measuring the luminous flux of the samples, the bulbs' filaments were seasoned. Seasoning is performed to assure more accurate measurements and is typically for 10% of the bulb's design life or 10 hours, whichever is less. Since FMVSS 108 does not specify design life for the bulbs, the industry standard design lifes of 320 hours for Lower Beam and 150 hours for Upper Beam were assumed. Seasoning consisted of installing the samples into headlamp blanks and operating continuously at 12.8V for 3.2 hours (Lower Beam) or 1.5 hours (Upper Beam).

After seasoning, both filaments of each sample were measured for current, power, luminous flux, and color at the specified test voltage (12.80V) in Calcoast - ITL's 0.85 m integrating sphere.

Report No.: 151221-01H

TEST DATA SHEET

Project Name: Philips HB2 (9003) Automotive Headlamp Replaceable Bulb Luminous Flux Measurement and Comparison

LUMINOUS FLUX MEASUREMENT

Equipment:
- Calcoast - ITL Custom 0.85 m integrating sphere
- Kepco JQE 15-12M, 150W Power Supply
- Keithley 175 Digital Multimeter (Voltage)
- Fluke 45 Digital Multimeter (Current)
- International Light IL-1400 with SEL033Y/W photometer
- Ocean Optics USB2000 Spectroradiometer

FMVSS 108 HB2 requirements at 12.80V:
- Lower Beam Maximum Power: 65 W
- Upper Beam Maximum Power: 72 W
- Lower Beam Luminous Flux: 910 Lm ± 10% (819 Lm to 1001 Lm)
- Upper Beam Luminous Flux: 1500 Lm ± 10% (1350 Lm to 1650 Lm)

Samples placed in the HB2 test fixture that allows remote measuring of voltage at the terminals. An absorption bulb was used to determine the effect of the test fixture as compared to the test fixture used to calibrate the system and correct for any error.

Voltage to the sample was slowly increased from 0 to the test voltage within 15 seconds, then allowed to stabilize for 3 minutes in order to reach equilibrium. After 3 minutes, the bulb's current, consumed power, luminous flux, and color were recorded. The luminous flux was measured in Lumens using the IL-1400 while the color (including Correlated Color Temperature in Kelvin) was measured using the software package that came with the Ocean Optics USB2000 spectroradiometer.

Philips Standard HB2, Lower Beam at 12.80V

Sample	Current	Power	Flux	Color (x, y)	CCT (K)
S1	4.789A	61.3W	866 Lm	(0.427, 0.399)	3140K
S2	4.749A	60.8W	855 Lm	(0.427, 0.399)	3140K
S3	4.808A	61.5W	904 Lm	(0.427, 0.399)	3140K
S4	4.778A	61.2W	950 Lm	(0.427, 0.399)	3140K

Average flux: 894 Lm

Philips X-tremeVision HB2, Lower Beam at 12.80V

Sample	Current	Power	Flux	Color (x, y)	CCT (K)
XV1	4.726A	60.5W	962 Lm	(0.408, 0.393)	3470K
XV2	4.719A	60.4W	920 Lm	(0.409, 0.394)	3456K
XV3	4.744A	60.7W	885 Lm	(0.406, 0.393)	3513K
XV4	4.741A	60.7W	892 Lm	(0.408, 0.393)	3470K

Average flux: 915 Lm

Report No.: 151221-01H

TEST DATA SHEET

Project Name: Philips HB2 (9003) Automotive Headlamp Replaceable Bulb Luminous Flux Measurement and Comparison

Philips Standard HB2, Upper Beam at 12.80V

Sample	Current	Power	Flux	Color (x, y)	CCT (K)
S1	5.266A	67.4W	1416 Lm	(0.426 ,0.400)	3167K
S2	5.283A	67.6W	1401 Lm	(0.427, 0.400)	3167K
S3	5.302A	67.9W	1400 Lm	(0.426, 0.400)	3167K
S4	5.334A	68.3W	1430 Lm	(0.426, 0.400)	3167K

Average flux: 1412 Lm

Philips X-tremeVision HB2, Upper Beam at 12.80V

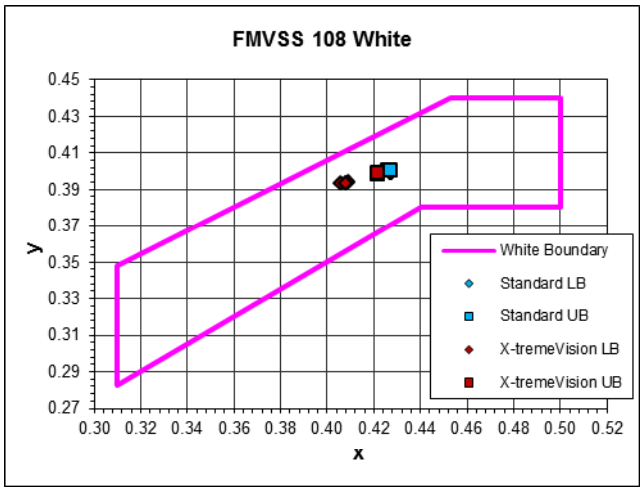
Sample	Current	Power	Flux	Color (x, y)	CCT (K)
XV1	5.294A	67.8W	1534 Lm	(0.422, 0.398)	3226K
XV2	5.276A	67.5W	1520 Lm	(0.422, 0.399)	3234K
XV3	5.266A	67.4W	1523 Lm	(0.422, 0.398)	3226K
XV4	5.274A	67.5W	1528 Lm	(0.422, 0.398)	3226K

Average flux: 1526 Lm

Color Requirements:

White

$0.38 \leq y \leq 0.44$
$0.31 \leq x \leq 0.50$
$y \leq 0.15 + 0.64x$
$y \geq 0.05 + 0.75x$



RESULTS

The Philips Standard HB2 Lower Beam average luminous flux was 894 lumens. The Philips X-tremeVision HB2 Lower Beam average luminous flux was 915 lumens, an average increase of +2.3%. The color band of the X-tremeVision shifts the color of its Lower Beam slightly bluer than the Standard HB2.

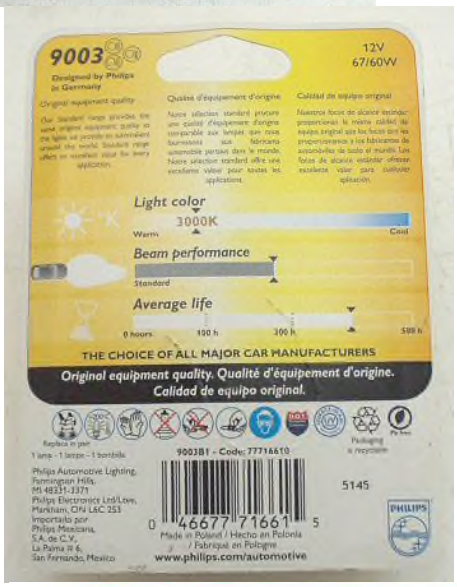
The Philips Standard HB2 Upper Beam average luminous flux was 1412 lumens. The Philips X-tremeVision HB2 Upper Beam average luminous flux was 1526 lumens, an average increase of +8.1%. The color of the Upper Beam is equivalent between the two bulb types.

Both bulb types' electrical and photometric performance conform to the requirements of FMVSS 108.

Report No.: 151221-01H

PHOTOGRAPH SHEET

Project Name: Philips HB2 Automotive Headlamp Replaceable Bulb Luminous Flux Measurement and Comparison



Report No.: 151221-01H

PHOTOGRAPH SHEET

Project Name: Philips HB2 Automotive Headlamp Replaceable Bulb Luminous Flux Measurement and Comparison

Top: Philips Standard HB2
Bottom: Philips X-tremeVision HB2

Philips Standard HB2

Philips X-tremeVision HB2

EXHIBIT B

ORIGINAL

A

Memorandum

U.S. Department of Transportation
National Highway Traffic Safety Administration

RECEIVED
NHTSA DOCKET
'96 MAR -7 A11 :05

93-11-N01-006

RECEIVED
NHTSA DOCKET

Subject: ACTION: Transmittal to the Part 564, Replaceable Light Source Information Docket, Docket No. 93-11; Information on the Replaceable Light Source Type HB2

Date:

From: Deborah L. Parker
Director, Office of Crash Avoidance Standards

Reply to Attn. of:

To: Docket Section

9 pp

VIA: Samuel J. Dubbin
Chief Counsel

NHTSA-98-3397-11

Attachment I along with three original sets of reproducible drawings of Figure 23 are forwarded for placement in the Part 564, Replaceable Light Source Information Docket, Docket 93-11. This cover memorandum along with Attachment I should be retained together with the Figure 23 drawings and placed as a unit in Docket No. 93-11. In accordance with the conversation between my staff member, Kenneth O. Hardie and docket staff person Carolyn Green, on February 6, 1996, three sets of original reproducible drawings, each with Attachment I will satisfy the docket room distribution requirements.

This submission to the docket is made in accordance with Final Rule (60 FR 58522) that amends 49 CFR Parts 564 and 571 to adopt amendments to facilitate the transfer by NHTSA of all dimensional and specification information on Type HB replaceable light sources for headlamps from Standard No. 108 to Docket No. 93-11. This regulatory action is intended to simply Standard No. 108 while ensuring consistent regulatory treatment of all headlamp replaceable light sources. The type of replaceable light source being submitted herein this memorandum to Part 564 Docket No. 93-11 is Type HB2.

Please note that the original drawings and Attachment are not provided herein this memorandum. We wish to ensure that they are not damaged or lost during the inter-department routing, review and signature process. Three copies of Attachment I and three sets of original reproducible drawings of Figures 23 -1 through 23-7 are available from Mr. Hardie upon notification of the receipt of this memorandum. If you need any further information, please contact Mr. Hardie on X66987.

Attachment
FIGURES 23-1 through 23-7

001

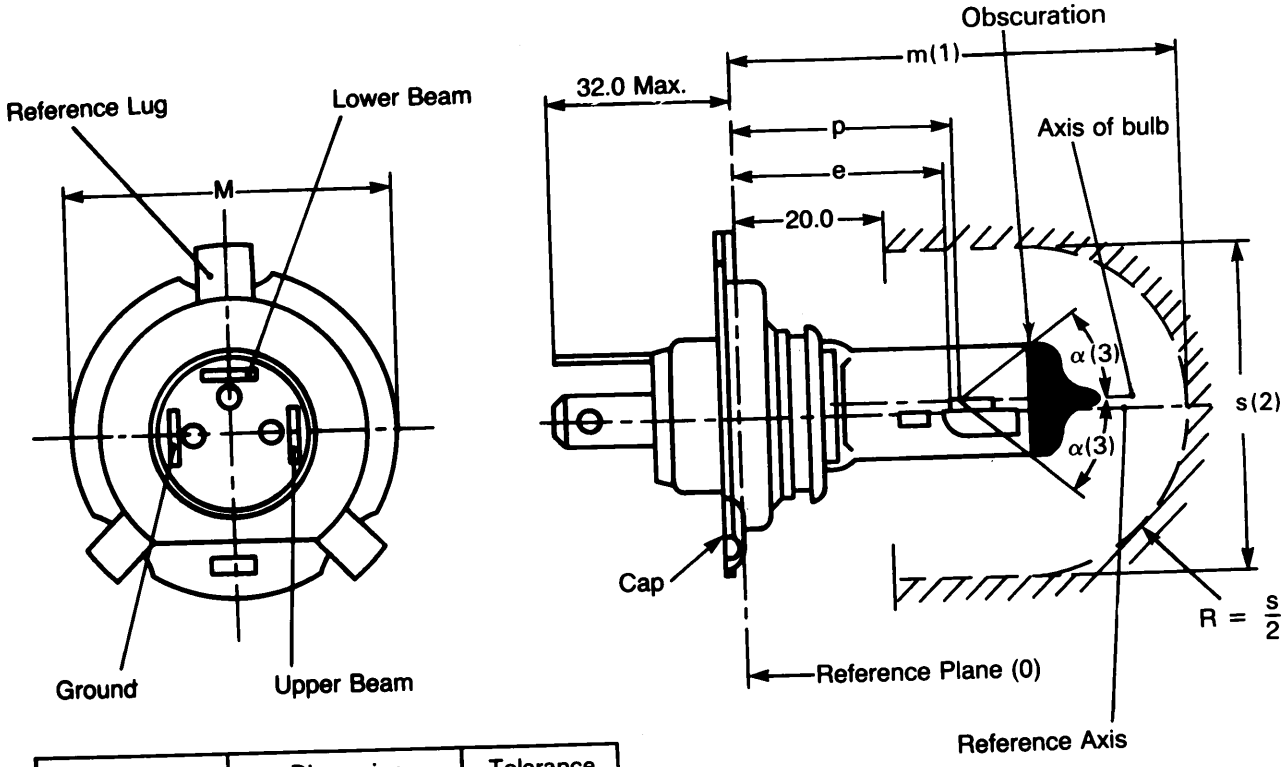
ATTACHMENT I

SPECIFICATIONS FOR THE TYPE HB2 STANDARDIZED REPLACEABLE LIGHT SOURCE

A Type HB2 light source shall be designed to conform to the dimensions specified in Figure 23. The dimension "A" utilized in the "S9-Deflection test for replaceable light sources" is 31.25 ±0.40 millimeters (1.23 ± 0.016 inches).

Maximum power and luminous flux shall be as follows:

MAXIMUM POWER ON THE LOWER BEAM	65 WATTS
MAXIMUM POWER ON THE UPPER BEAM	72 WATTS
LUMINOUS FLUX IN LUMENS ON THE LOWER BEAM	910 ±10%
LUMINOUS FLUX IN LUMENS ON THE UPPER BEAM	1500 ±10%



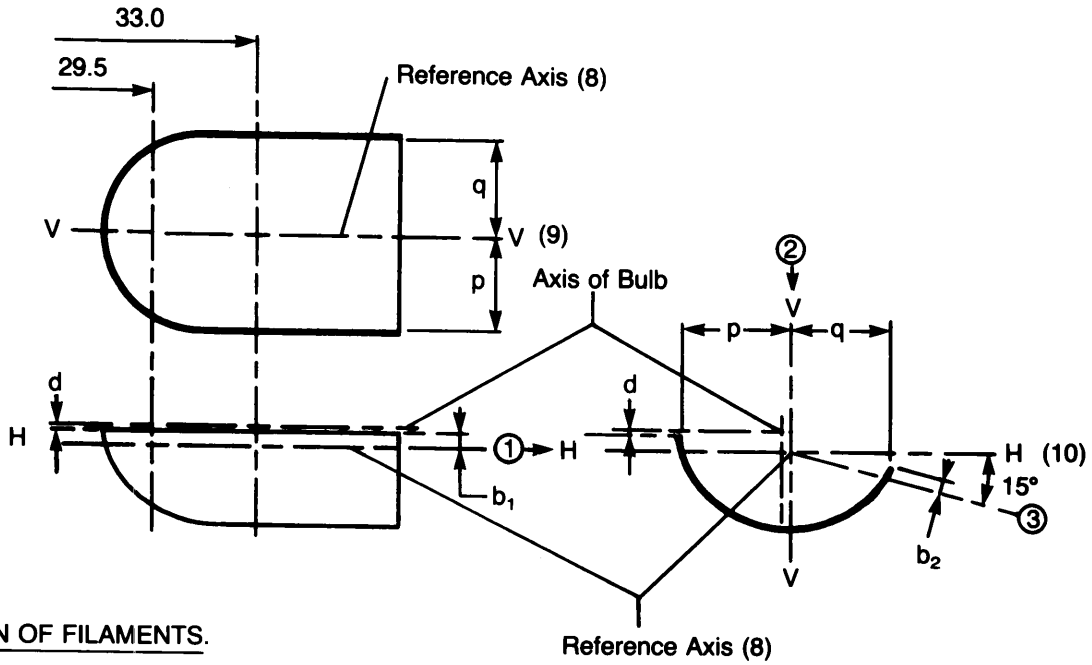
Reference	Dimension	Tolerance
e	28.5	+0.35 −0.15
p	28.95	—
m(1)	max. 60.0	—
s(2)	45.0	—
α(3)	max. 40°	—

Dimensions in millimeters

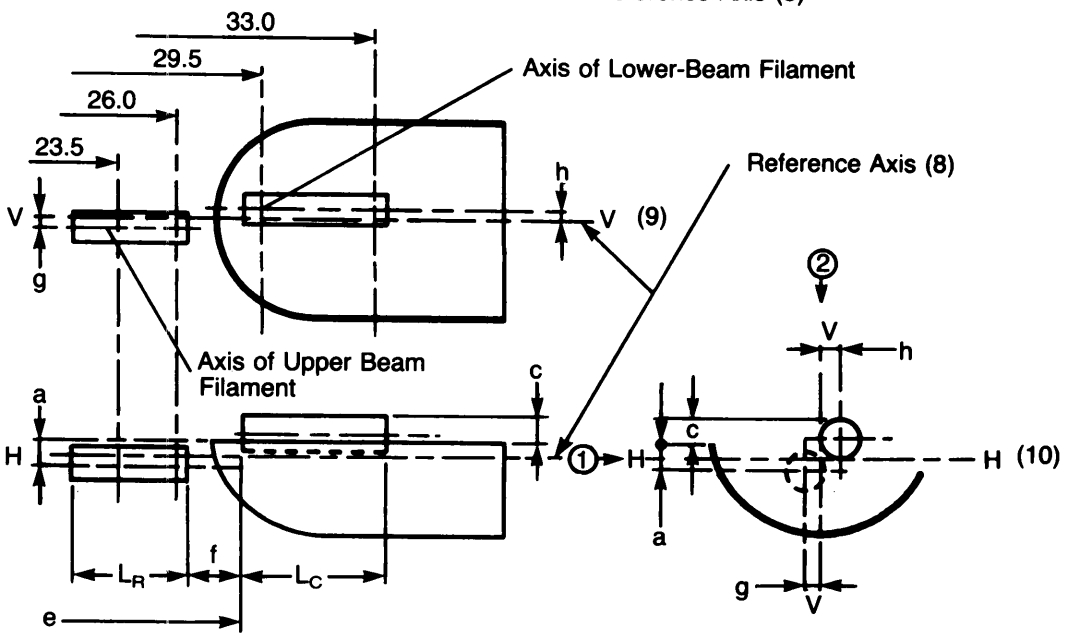
(0) The reference plane is the plane formed by the seating points of the three lugs of the base ring.
(1) "m" denotes the maximum length of the light source.
(2) It must be possible to insert the light source into a cylinder of diameter "s" concentric with the reference axis and limited at one end by a plane parallel to and 20 mm distant from the reference plane and at the other end by a hemisphere of radius s/2.
(3) The obscuration must extend at least as far as the cylindrical part of the glass bulb. It must also overlap the internal shield when the latter is viewed in a direction perpendicular to the reference axis.

Figure 23-1. Type HB-2 Replaceable Light Source — Dimensional Specifications

POSITION OF SHIELD.



POSITION OF FILAMENTS.



(Also see continuation page)

Figure 23-2. Type HB-2 Replaceable Light Source — Shield and Filament Position Dimensional Specifications

04

Reference	Dimension	Tolerance
a/26*	0.8	±0.30
a/23.5*	0.8	±0.40
b_1/29.5*	0	±0.25
b_1/33*	b_1/29.5vm**	± 0.20
b_2/29.5*	0	±0.25
b_2/33*	b_2/29.5vm**	± 0.20
c/29.5*	0.6	± 0.30
c/33*	c/29.5vm**	±0.30
d	min 0.1	—
e(6)	28.5	+ 0.35 − 0.15
f(4)(5)(7)	1.7	− 0.30 + 0.30

Dimension	Reference	Tolerance
g/26*	0	±0.4
g/23.5*	0	±0.5
h/29.5*	0	±0.5
h/33*	h/29.5vm**	± 0.35
$l_{R(5)(7)}$	4.5	±0.8
$l_{c(5)(5)}$	5.5	±0.8
P/33*	Depends on the shape of the shield	—
q/33*	$\frac{p+q}{2}$	±0.6
b_1-b_2	0	± 0.25

* Dimension will be measured at the distance from the reference plane indicated in mm afer the stroke.

** ./29.5vm means the value measured at a distance of 29.5 mm from the reference plane.

Dimensions indicated in the table above are measured in three directions:

Direction ① for dimensions a, b_1, c, d, e, f, 1_R and 1C;

Direction ② for dimensions g, h, p and q;

Direction ③ for dimensions b_2.

Dimensions p and q are measured in a plane parallel to and 33 mm away from the reference plane.

Dimensions b_1, b_2, c and h are measured in planes parallel to and 20.5 mm and 33 mm away from the reference plane.

Dimensions a and g are measured in planes parallel to and 26.0 mm and 23.5 mm away from the reference plane.

(4) The end turns of the filaments are defined as being the first luminous turn and the last luminous turn that are at substantially the correct helix angle.

(5) For the lower-beam filament the points to be measured are the intersections, seen in direction ①, of the lateral edge of the shield with the outside of the end turns defined under footnote 4.

(6) "e" denotes the distance from the reference plane to the beginning of the lower-beam filament as defined under footnote 4.

(7) For the upper-beam filament the points to be measured are the intersections, seen in direction ①, of a plane parallel to plane HH and situated at a distance of 0.8 mm below it, with the end turns defined under footnote 4.

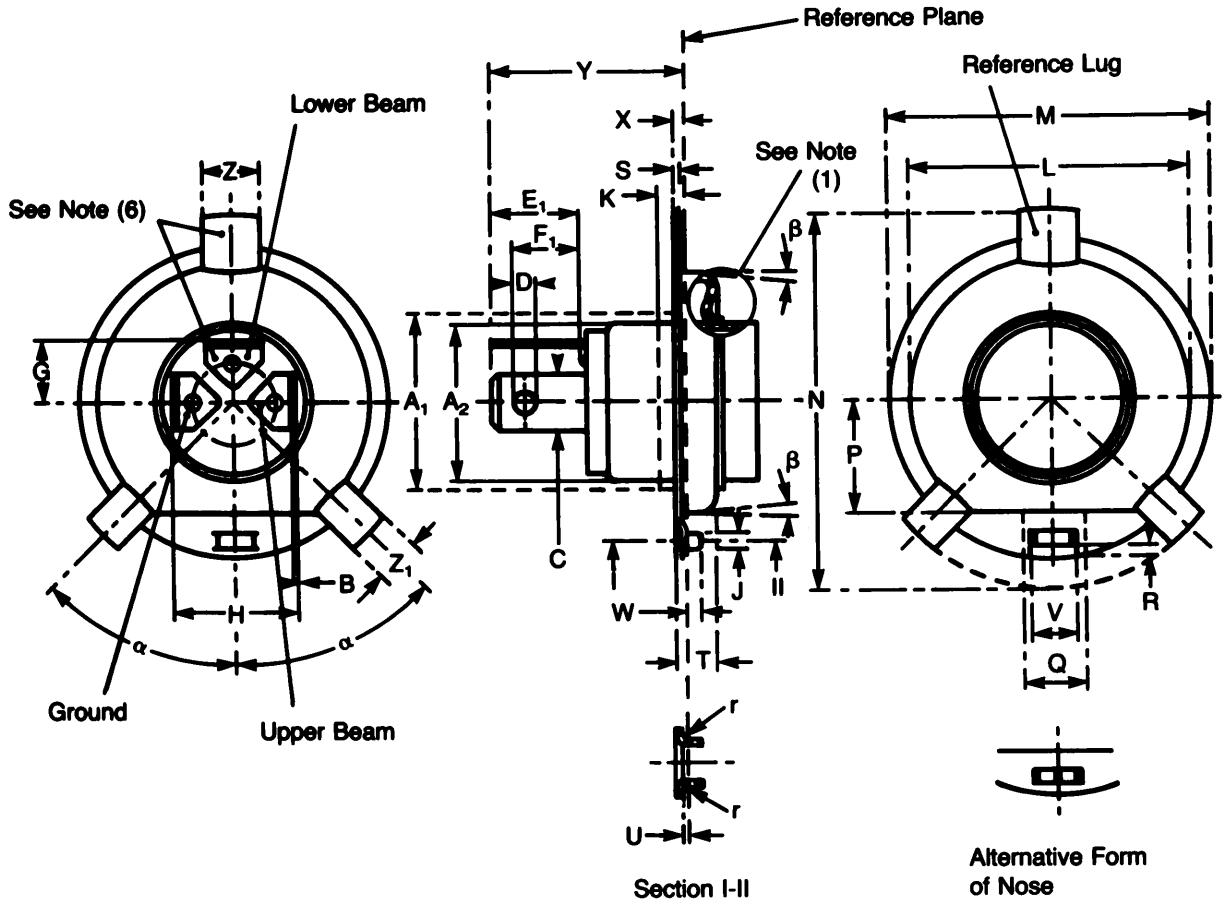
(8) The reference axis is the line perpendicular to the reference plane and passing through the center of the circle of diameter "M".

(9) Plane VV is the plane perpendicular to the reference plane and passing through the reference axis and through the intersection of the circle of diameter "M" with the axis of the reference lug.

(10) Plane HH is the plane perpendicular to both the reference plane and plane VV and passing through the reference axis.

Figure 23-3. (Continued) Type HB-2 Replaceable Light Source — Shield and Filament Position Dimensional Specifications

05



(Also see continuation page)

Figure 23-4. Type HB-2 Replaceable Light Source — Assembled Base P43t-38 on Finished Light Source — Dimensional Specifications

06

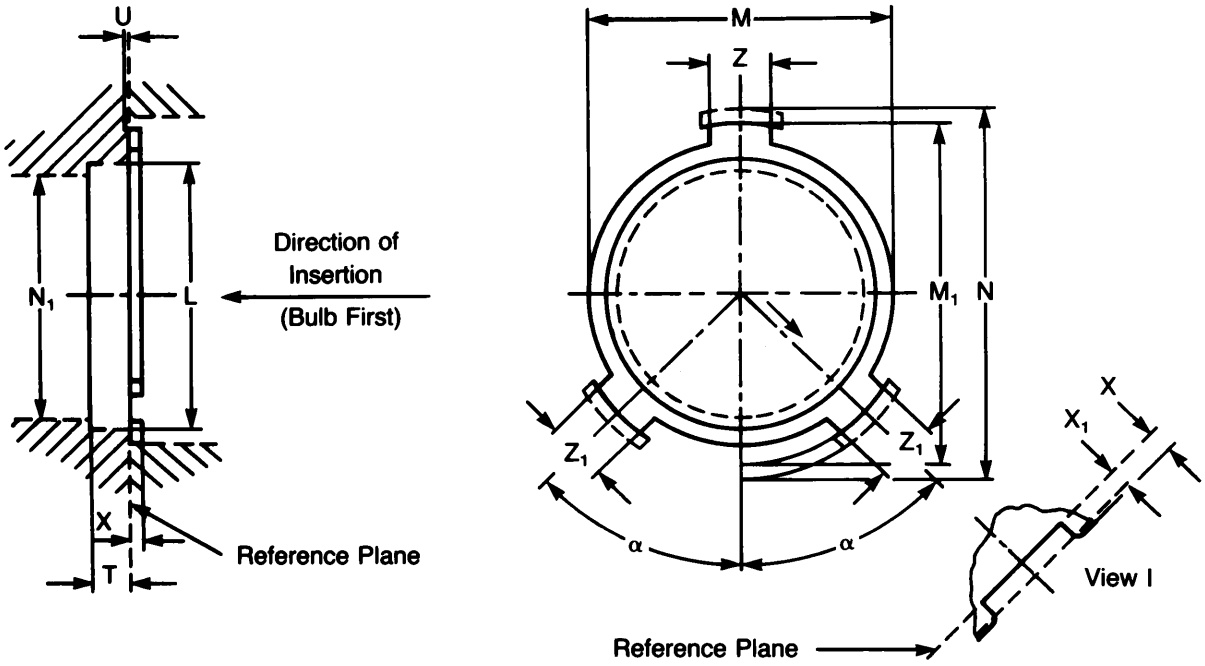
Dimension	Min.	Max.	Dimension	Min.	Max.
A_1 (8)	25.0		Q (2) (7)	8.5	—
A_2 (10)	Nominal	22.0	R	1.3	1.7
B	0.7	0.8	S	0.45	—
C	7.7	8.1	T	5.0	6.0
D	3.0	3.3	U	(9)	
E_1	11.8	13.6	V (2) (5)	6.3	6.5
F_1	8.8	10.3	W	1.8	2.2
G	8.5	9.0	X	1.1	1.3
H	17.0	17.9	Y	—	32.0
J	1.9	2.1	Z	7.9	8.0
K (10)	2.0		Z_1	5.8	6.2
L (2) (4)	37.8	38.0	r	(9)	
M(3)	42.9	43.0	α	44°	46°
N	51.6	52.0	β	—	5°
P (2) (7)	15.3	15.5			

Dimensions in millimeters.
The drawing is intended only to indicate the dimensions essential for interchangeability

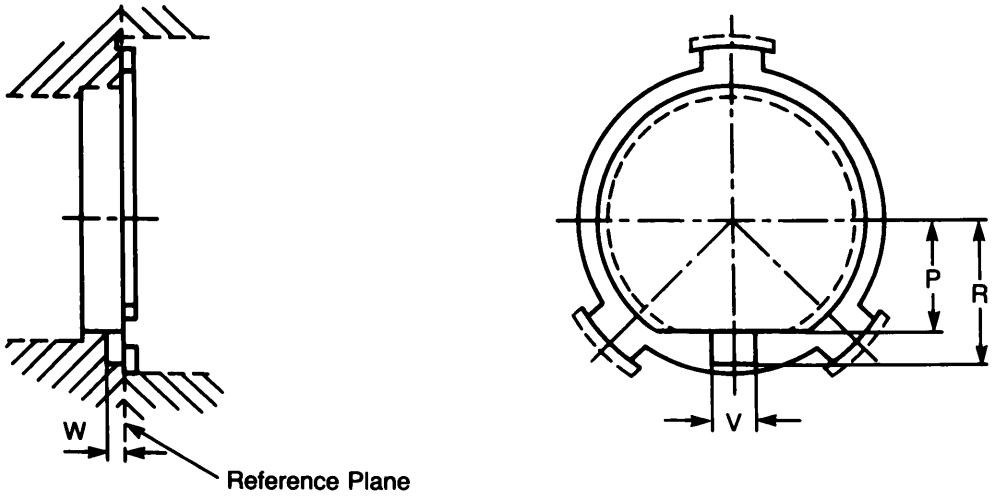
(1) The form of this part of the ring is optional and may be flat or recessed. However, the form shall be such that it will not cause any abnormal glare from the lower beam filament when the light source is in its normal operating position in the vehicle.
(2) This dimension is measured at the reference plane.
(3) Dimension M is the diameter on which the light source is centered when checking its dimensional characteristics.
(4) The maximum allowable eccentricity of cylinder L with respect to the circle of diameter M is 0.05 mm.
(5) The maximum allowable displacement of the center of the nose from the line running through the centers of the reference lug and the circle of diameter M is 0.05 mm. The sides of the nose shall not bend outwards.
(6) [Reserved]
(7) Dimension Q denotes the minimum width over which both the minimum and maximum limits of dimension P shall be measured. Outside dimension Q, the maximum limit for dimension P shall not be exceeded.
(8) The means of securing the ring in the headlamp shall not encroach on this cylindrical zone, which extends over the full length of the shell shown on this side of the ring.
(9) The radius r shall be equal to or smaller than dimension U.
(10) Beyond distance K, in the direction of the contact tabs, both the minimum and the maximum limits of dimension A_2 shall be measured.

Figure 23-5. (Continued) Type HB-2 Replaceable Light Source — Assembled Base P43t-38 on Finished Light Source — Dimensional Specifications

07



OPTIONAL FEATURES TO ENSURE CORRECT INSERTION



(Also see continuation page)

Figure 23-6. Type HB-2 Replaceable Light Source — Reflector Bulb Cavity P43t — Dimensional Specifications

Dimension	Min.	Max.
L (4)	38.2	None
M	43.02 (1)	43.2
M_1	—	49.0
N (5)	52.5	
N_1	(6)	
P (3)	16.0	—
R (4)	20.5	—
T	5.5	—

Dimension	Min.	Max
U	0.4	—
V (4)	6.8	—
W (4)	2.5	—
X (3)	1.8	—
X_1 (2)	1.4	—
Z (3)	8.05	8.13
Z_1 (3)	8.0	8.5
α	44°	46°

Dimensions in millimeters
The drawing is intended only to indicate the dimensions essential for interchangeability.

The socket shall be so designed that the light source will be retained in it only when the light source is in the correct position.

The means of retention shall make contact only with the prefocus base ring and the total force exerted, when the light source is in position, shall be not less than 10 N and be not more than 60 N.

(1) This value shall be complied with between the rim of the socket and the reference plane (dimension X). However, it may be reduced to 38.5 mm within the dimensions Z and Z_1 which correspond with the support points for the lugs of the ring.

(2) Dimension X_1 denotes the minimum distance over which dimensions Z and Z_1 shall apply. Outside dimension X_1 the slots may be chamfered or rounded.

(3) Wrong adjustment of the light source in the socket can be prevented in different ways, e.g.:
— by applying the additional optional features. (See lower drawing on Figure 23.6).
— by decreasing dimension Z_1 to 7.5–7.7 mm followed by a decrease of the tolerance for α to give values of 44°40′–45°20′.
— by using a sufficiently large value of X depending on the construction of the socket.

(4) If dimension L is smaller than 40.5 mm, dimension V, R and W shall apply.

(5) Dimension N delineates the minimum free space to be reserved for the three lugs of the ring.

(6) Dimension N_1 shall be not less than 35 mm diameter over a distance of 20 mm from the reference plane and shall be not less than 45 mm diameter at any distance greater than 20 mm from the reference plane.

Figure 23-7. (Continued) Type HB-2 Replaceable Light Source Reflector Bulb Cavity P43t — Dimensional Specifications

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